driver means for developing, synchronously with the reference signal, voltage changes on the electrode array,

charge measuring means for measuring, synchronously with the reference signal, charges coupled to the electrode array and thus capacitance,

means for selectively inhibiting the driver means from developing voltage changes, the coupled charge measurements made during inhibition of the driver means representing the interference measure IM, and

(c) generator means for supplying a reference signal to the measurement means, said reference signal having a frequency which is not coherent with the frequency of the electrical interference, wherein said generator means includes means for changing the frequency of the reference signal when the interference measure IM exceeds a predetermined level.

4. The proximity sensor as in claim **3** wherein the generator means further includes means for storing a table of frequencies of reference signals and associated interference measures IM made for reference signals with each of such frequencies, and for producing a reference signal whose frequency has the lowest interference measure IM associated therewith.

5. A capacitance-based proximity sensor for locating the position of an object while rejecting electrical interference, comprising:

(a) an electrode array for forming capacitances which vary with movements of the object, wherein the electrode array comprises a plurality of first electrode strips spaced apart from each other in a first array, and a plurality of second electrode strips spaced apart from each other and in close proximity with the first electrode strips;

(b) measurement means coupled to the electrode array for measuring the capacitances synchronously with a reference signal, and

(c) generator means for supplying a reference signal to the measurement means, said reference signal having a frequency which is not coherent with the frequency of the electrical interference.

6. The proximity sensor of claim **5** wherein the measurement means includes

driver means for developing, synchronously with the reference signal, voltage changes on the electrode array,

a charge transfer means coupled to the electrode array for producing synchronously with the frequency of the reference signal, measurement signals representing charges coupled onto the electrode array as a result of the voltage changes,

synchronous demodulator means coupled to the charge transfer means for rectifying the measurement signals synchronously with the reference signal, and

low pass filter means coupled to the synchronous demodulator means for producing signals representing the average DC values of the rectified signals, and thus representing the capacitances of the electrode array.

7. The proximity sensor of claim **6** wherein the measurement means includes a plurality of capacitance measurement elements, each being connected to a respective electrode strip.

8. The proximity sensor of claim **7** further comprising a plurality of synchronous demodulation elements, each connected to a respective capacitance measurement element.

9. The proximity sensor of claim **1** further including a position locator means connected to the output of the measurement means for providing a position signal representative of the location of the object relative to the electrode array.

10. The detection system of claim **1** wherein the electrode array comprises first and second electrode sets spaced from each other to develop a capacitance for the touch pad.

11. The detection system of claim **10** wherein the first and second set of electrodes are generally orthogonal to each other to form virtual electrodes to provide capacitance.

12. The detection system of claim **1** wherein the measuring means comprises a capacitive measurement element coupled to the electrode array, a synchronous demodulator coupled to the capacitive measurement element, and a low-pass filter coupled to the demodulator.

13. A method of sensing the position of an object on an electrode array comprising the steps of:

(a) generating capacitances on the array which vary with movement of the object,

(b) measuring the capacitances on the array synchronously with the frequency of a reference signal, and

(c) generating a reference signal having a frequency which is not coherent with the frequencies of the electrical interference affecting the capacitances by evaluating the electrical interference, storing a table of frequencies of selected reference signals and measures of electrical interference IM for each of these frequencies, and for producing a reference signal whose frequency has the lowest IM associated therewith.

14. The method of claim **13** and further including producing a signal indicating the position of the object relative to the electrode array.

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